Chapter Two
Purpose and Need

The purpose of the SR 518 North Airport Expressway/SR 99 Interchange to the I-5/I-405 Interchange Project is to improve safety and mobility along this important regional transportation corridor. Improvements are needed because eastbound traffic is projected to increase by more than twenty percent by year 2030. Such a traffic increase would slow down the movement of people and goods and increase the risk of accidents along SR 518. Currently, the eastbound off-ramp to 51st Avenue South is classified as a high accident location.

1 Where is the Proposed Project located?

SR 518 is an urban corridor that connects SR 509 in Burien to SR 99, I-5, and I-405. The general project area is located along SR 518 between Sea-Tac International Airport (see **Exhibit 2-1**) and the I-5 and I-405 interchange.

2 Why is SR 518 an important regional transportation link?

SR 518 is a major thoroughfare for travelers, freight, and commuters. SR 518 also serves as a primary gateway to the city of Burien and provides the main north roadway access to Sea-Tac International Airport. More than 120,000 vehicles use SR 518 every day.

Exhibit 2-1
SR 518 General Project Vicinity

3 What is the purpose of the Proposed Project?

This purpose of this project is to improve the safety of driving conditions and mobility, reduce vehicle delays, and accommodate projected airport traffic. Vehicle delays not only slow down the movement of people and goods, but also increase the risk of accidents.

Traffic along the SR 518 corridor is projected to increase substantially as a result of planned growth in the surrounding community and at Sea-Tac Airport. The Port of Seattle projects an increase in passenger traffic from about 29 million annual passengers in 2003 to about 44 million by 2020, a 53 percent increase. Air cargo freight through the airport is expected to increase by about 3.4 percent each year, resulting in more truck traffic on SR 518.

Today, traffic congestion between Sea-Tac Airport and the SR 99 interchange and the I-5 interchange occurs because of periodic high vehicle volumes combined with close spacing of on- and off-ramps. Merging vehicles crowd into an already congested freeway and then weave across lanes of traffic to reach their desired downstream freeway ramp. In the future, when volumes are higher, this congestion will become much worse, with eastbound travel times from the airport to I-405 expected to increase between 5 and 30 minutes depending on the time of day.

WSDOT's *High Accident Location Review Report* for 2004 shows the western portion of the Proposed Project as part of a high accident corridor. A high accident corridor is a roadway (one mile or greater in length) with a five-year history of higher-than-average collisions and accidents. Accidents at the eastern section of the high accident corridor, the North Airport Expressway interchange, are primarily caused by excessive speeds. At this location, eastbound vehicles are able to travel at speeds of around 50 mph, but quickly encounter congestion caused by the North Airport Expressway and SR 99 on-ramps. The project would reduce congestion at the interchange, and thereby the likelihood of future accidents, even though volumes throughout the corridor will increase.

The *High Accident Location Review Report* for 2004 also lists the 51st Avenue South off-ramp as a high accident location. Most accidents in this location are related to vehicles hitting fixed objects. The project will modify the ramp to improve driver visibility.

4 Why do we need additional capacity between the North Airport Expressway/SR 99 interchange and the I-5/I-405 interchange?

Increasing capacity to eastbound SR 518 between the North Airport Expressway/SR 99 interchange and the I-5/I-405 interchange would improve safety and mobility on SR 518 and accommodate projected airport traffic (passenger and

freight) through the year 2030. The Proposed Project would also improve the ability of traffic to merge at the North Airport Expressway/SR 99 interchange and reduce congestion. Increased capacity should reduce the number of rear-end collisions along the corridor.

5 What happens if the Proposed Project is not built?

Estimates show that traffic congestion on SR 518 will get much worse as more people use the freeway. WSDOT needs to make the proposed improvement to ensure that SR 518 continues to move people and goods and that adequate airport access is maintained.

Projections for the 2030 PM peak traffic period indicate that traffic volumes on the eastbound North Airport Expressway ramp will increase by about 860 vehicles per hour. Combined with an additional 770 vehicles on SR 518, these volumes would substantially exceed capacity at the interchange and result in delays of more than thirty minutes on the North Airport Expressway. Traffic backups could extend to the airport parking garage.

Experience has shown that extreme vehicle delays will increase the number of collisions along a roadway. This project, when built, would alleviate future congestion and related safety problems.